

## NISTTech

### RADIOMETER AND METHOD FOR USE OF SAME

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**Docket No. 13-008**

#### Applications

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- **Embodiments**  
Can be used for embodiments such as imaging arrays, broadband(multispectral) sensors and multi-element trap radiometers

#### Advantages

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- **Highly efficient**  
The carbon nanotube array is both a highly efficient optical absorber, and a very sensitive thermistor at cryogenic temperatures
- **High volume production, and control**  
The lithographic design of the radiometer enables both high volume production of many identical copies on a single silicon wafer as well as fine control over all aspects of the design

#### Abstract

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The present invention is a simplified electrical-substitution absolute radiometer. This radiometer uses vertically-aligned carbon nanotube arrays as the thermistor, optical absorber, and electrical heater, as well as using a micromachined silicon weak-link to set the thermal conductance. Essentially this radiometer can be used as an absolute standard for measuring optical power on a single chip.

#### Inventors

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- Lehman, John H.

#### Status of Availability

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This invention is available for licensing exclusively or non-exclusively in any field of use.

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